

**United States Department of Agriculture  
Forest Service**

**Aviation Safety Alert**

**No. 2002-13**

**April 25, 2002**

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**Subject:** Bell 212 Helicopter Load Calculations

**Area of Concern:** Helicopter Operations

**Distribution:** All USFS Aviation Operations

**Discussion:** Recently there have been inquiries from the field regarding the proper procedures and proper performance charts and limitations used in the completion of the Helicopter Load Calculation for the Bell 212. Additionally, procedures for performance planning for the Helicopter Load Calculation with the availability of the Bell 212's Increased Takeoff Horsepower Supplement (Flight Manual Supplement FMS-29) and Increased Weight Altitude Temperature Limit Supplement (FMS-35) has further confused the issue of proper completion of the Helicopter Load Calculation process.

The following information should help clarify the procedures for completing the Helicopter Load Calculation for this helicopter and its enhanced performance supplement kits. The information and instructions are valid for both the Department of the Interior and Department of Agriculture operations.

The Helicopter Load Calculation process is an Interagency (OAS or USFS) planning document. It is a requirement of those agencies to assist in safe flight operations. It is not a Federal Aviation Regulation requirement and it is not a helicopter manufacturer's requirement. The process was instituted by both agencies in 1981 to ensure that proper performance planning was being done during natural resource helicopter missions.

**Instructions:** The following are instructions regarding the proper completion of the Helicopter Load Calculation for the basic Bell 212 (reference the Bell 212 Rotorcraft Flight Manual FM-1, Revision 3, 01 May 1998) with Cargo Hook Flight Manual Supplement (FMS-3, Revision 1, 12 September 1997) kit option. Additionally, procedures for the completion of the Load Calculation process with the Bell 212 Increased Takeoff Horsepower Supplement upgrade kit (FMS-29, Reissue, 14 August 1995) and the Bell 212 Increased Weight Altitude Temperature Limit Supplement upgrade kit (FMS-35, 22 March 1996) are included.

Specific instructions, per the Interagency Helicopter Operations Guide, for completing the Load Calculation form for all models of helicopters can be found on the inside covers of the Helicopter Load Calculation booklets of forms FS-5700-17 and OAS-67.

**Lines 1-6:** Self-explanatory.

**Line 7:** For both HIGE and HOGE columns use external cargo charts. *Do not use Weight-Altitude-Temperature charts found in the Limitation Section.*

For the basic Bell 212 use Flight Manual Supplement FMS-3, Cargo Hook Figure 4-1 IGE Takeoff Power (Heater Off), page 7 and Figure 4-2 OGE Takeoff Power (Heater Off), pages 13 and 14.

For the Increased Takeoff Horsepower option version use Flight Manual Supplement FMS-29, subsection labeled External Cargo, Figure 4-5 IGE Takeoff Power (Heater Off), page 30 and Figure 4-5 OGE Takeoff Power (Heater Off), pages 26 and 27.

For the Increased Weight Altitude Temperature Limit (FMS-35) option version use Flight Manual Supplement FMS-29, subsection labeled External Cargo, Figure 4-5 IGE Takeoff Power (Heater Off), page 30 and Figure 4-5 OGE Takeoff Power (Heater Off), pages 26 and 27. **Note:** The use of FMS-29 is due to FMS-35 not having any External Cargo charts and a FMS-35 version has the FMS-29 kit installed.

**Line 8:** Use the 390 pound fixed weight reduction for all versions of the Bell 212.

**Line 9:** Self-explanatory.

**Line 10:** Use the Weight-Altitude-Temperature chart found in Section 1, Limitations, of the Bell 212 Rotorcraft Flight Manual.

For the basic Bell 212 use the Rotorcraft Flight Manual (FM-1) Section 1, Limitations, Figure 1-1, Weight-Altitude-Temperature chart, page 1-11.

For the Increased Takeoff Horsepower option version use the Rotorcraft Flight Manual (FM-1) Section 1, Limitations, Figure 1-1, Weight-Altitude-Temperature chart, page 1-11. *There is no WAT chart in FMS-29 therefore revert back to basic manual (FM-1).*

For the Increased Weight Altitude Temperature Limit option version use the Flight Manual Supplement FMS-35, Section 1, Limitations, Figure 1-1, WAT chart, page 2.

**Line 11:** Make the decision as to whether mission load is jettisonable or nonjettisonable and then whether it will be a HIGE or HOGE operation. Then follow the instructions for Line 11 on the inside cover of the Helicopter Load Calculation booklet (FS-5700-17 or OAS-67).

**Lines 12-16:** Self-explanatory.

For detailed information [click here](#) to see attachment or if you have any further questions regarding this process contact Morgan Mills, National Helicopter Standardization Pilot, U.S. Forest Service, NIFC at (208) 387-5614. Simultaneous distribution of this alert is being made by the Department of Interior, Office of Aircraft Services.

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